

# NDR - Near Drowning

## NDR-AP ANATOMY AND PHYSIOLOGY

**OUTCOME:** The patient/family will understand the pathophysiology of near drowning.

### STANDARDS:

1. Explain that the most important contribution to morbidity and mortality resulting from near drowning is hypoxemia and decrease in oxygen delivery to vital tissues.
2. Explain that the pathophysiology of near drowning is intimately related to the multiorgan effects of hypoxemia.
3. Explain that central nervous system (CNS) damage may occur as a result of hypoxemia sustained during the drowning episode or secondarily because of pulmonary damage and subsequent hypoxemia.
4. Explain that aspiration of fluid and vasoconstriction can result in significantly impaired gas exchange. Explain that acute respiratory distress syndrome (ARDS) may develop as a result of aspiration.
5. Explain that myocardial dysfunction may result from ventricular dysrhythmias and asystole due to hypoxemia. In addition, hypoxemia may directly damage the myocardium, decreasing cardiac output.
6. Explain that metabolic acidosis may impair cardiac function.

## NDR-C COMPLICATIONS

**OUTCOME:** The patient/family will understand the complications resulting from near drowning and how it relates to their specific condition.

### STANDARDS:

1. Explain that the following may result from the near drowning experience:
  - a. Neurologic injury (c spine or head trauma)
  - b. Pulmonary edema or ARDS
  - c. Secondary pulmonary infection
  - d. Multiple organ system failure
  - e. Acute tubular necrosis
  - f. Myoglobinuria
  - g. Hemoglobinuria
2. Explain that the risk of serious complications may be reduced by seeking prompt medical attention.

## **NDR-FU      FOLLOW-UP**

**OUTCOME:** The patient/family will understand the importance of follow-up in the treatment of near drowning.

### **STANDARDS:**

1. Discuss the importance of follow-up care.
2. Discuss the procedure for obtaining follow-up appointments and that follow-up appointments should be kept.
3. Emphasize that full participation of the treatment plan is the responsibility of the patient/family.
4. Discuss signs/symptoms that should prompt immediate follow-up.
5. Discuss the availability of community resources and support services and refer as appropriate.

## **NDR-L      LITERATURE**

**OUTCOME:** The patient/family will receive literature about near drowning.

### **STANDARDS:**

1. Provide the patient/family with literature on near drowning.
2. Discuss the content of the literature.

## **NDR-M      MEDICATIONS**

**OUTCOME:** The patient/family will understand the purpose, proper use, and expected outcomes of prescribed drug therapy.

### **STANDARDS:**

1. Describe the name, strength, purpose, dosing directions, and storage of the medication.
2. Discuss the risks, benefits, and common or important side effects of the medication and follow up as appropriate.
3. Discuss any significant drug/drug, drug/food, and alcohol interactions, as appropriate.
4. Discuss the importance of full participation with the medication plan and that this is the patient's responsibility. Discuss any barriers to full participation.
5. Discuss the importance of keeping a list of all current prescriptions and over-the-counter medicines, vitamins, herbs, traditional remedies, and supplements. Encourage the patient to bring this list and pill bottles to appointments for medication reconciliation.

## **NDR-P        PREVENTION**

**OUTCOME:** The patient/family will understand and will make a plan for the prevention of drowning.

### **STANDARDS:**

1. Explain that the key to the prevention of drowning is education regarding safety around water. This includes the following elements:
  - a. Parents should be aware of their own as well as their children's limitations around water. Children must be supervised when near water even if not swimming.
  - b. Never swim alone and always supervise children when swimming.
  - c. Safe conduct around water and during boating and water or jet skiing is extremely important.
  - d. The use of alcohol or recreational drugs while around water is a common factor in water-related accidents.
  - e. The use of appropriate boating equipment, (personal flotation devices) is important.
  - f. Awareness of weather and water conditions prior to boating or swimming may prevent being stranded in water during a storm.
  - g. Check water depth and underwater hazards (e.g., rocks, drop-offs, currents) prior to swimming and diving.
  - h. Provide fencing and locking gates around swimming pools.
2. Explain that the following medical conditions may increase risk for drowning:
  - a. Seizure disorders
  - b. Diabetes mellitus
  - c. Significant coronary artery disease
  - d. Severe arthritis
  - e. Musculoskeletal disorders
3. Encourage patient/family members to learn CPR and rescue techniques.

## **NDR-TE        TESTS**

**OUTCOME:** The patient/family will understand the test(s) to be performed, including indications and impact on further care.

### **STANDARDS:**

1. Explain test(s) that have been ordered (explain as appropriate):
  - a. method of testing

- b. necessity, benefits, and risks of test(s) to be performed
- c. any potential risk of refusal of recommended test(s)
- d. any advance preparation and instructions required for the test(s)
- e. how the results will be used for future medical decision-making
- f. how to obtain the results of the test

2. Explain test results:

- a. meaning of the test results
- b. follow-up tests may be ordered based on the results
- c. how results will impact or effect the treatment plan
- d. recommendations based on the test results